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To: Commissioner for Patents for Examiner Yogesh K. Aggarwal Group Art Unit 2622	Facsimile No.: 571/273-8300
From: Natalie Swider Legal Assistant to Gerald G. Glanzman	No. of Pages Including Cover Sheet: 23
Message: Enclosed herewith: <ul style="list-style-type: none">• Transmittal of Appeal Brief; and• Appeal Brief.	
Re: Application No. 09/927,201 Attorney Docket No: 10010802-1	
Date: Monday, October 30, 2006	
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ATTORNEY DOCKET NO. 10010802-1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Richard L. Baer

Serial No.: 09/927,201

Examiner: Aggarwal, Yogesh K.

Filing Date: August 10, 2001

Group Art Unit: 2622

Title: Method and Apparatus for Removing Flicker from Images

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on October 18, 2006.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)(1)-(5)) for the total number of months checked below:

<input type="checkbox"/>	one month	\$ 120.00
<input type="checkbox"/>	two months	\$ 450.00
<input type="checkbox"/>	three months	\$1020.00
<input type="checkbox"/>	four months	\$1590.00

☐ The extension fee has already been filled in this application.

☒ (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 50-3718 the sum of \$500.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 50-3718 pursuant to 37 CFR 1.25.

A duplicate copy of this transmittal letter is enclosed.

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Date of Facsimile: October 30, 2006

Typed Name: Natalie Swider

Signature: Natalie Swider

Respectfully submitted,

Richard L. Baer

By

Gerald H. Glanzman
Gerald H. Glanzman
Attorney/Agent for Applicant(s)

Reg. No. 25,035

Date: October 30, 2006

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Docket No. 10010802-1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Richard L. Baer**

Serial No. 09/927,201

Filed: August 10, 2001

For: **Method and Apparatus for
Removing Flicker from Images**

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Group Art Unit: 2622

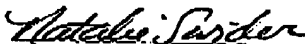
Examiner: Aggarwal, Yogesh K.

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Certificate of Transmission Under 37 C.F.R. § 1.8(a)

I hereby certify this correspondence is being transmitted via facsimile to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, facsimile number (571) 273-8300 on October 30, 2006.

By:


Natalie Swider

APPEAL BRIEF (37 C.F.R. 41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on October 18, 2006.

The fees required under § 41.20(B)(2), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

10/31/2006 MBINAS 00000024 503718 09927201

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REAL PARTY IN INTEREST

The real party in interest in this appeal is the following party:

Avago Technologies General IP (Singapore) Pte. Ltd. (Company Registration No. 200512430D), a company incorporated under the laws of Singapore whose registered office is at 8 Cross Street, #11-00 PWC Building, Singapore 048424.

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RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

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STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 1-26

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: 2-3, 12-13, 18-19, 22-23 and 26
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 1, 4-11, 14-17, 20, 21, 24 and 25
4. Claims allowed: 11 and 14-16
5. Claims rejected: 1, 7, 8, 10, 17, 20 and 21
6. Claims objected to: 4-6, 9, 24 and 25

C. CLAIMS ON APPEAL

The claims on appeal are: 1, 7, 8, 10, 17, 20 and 21

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STATUS OF AMENDMENTS

A Response to Final Office Action was mailed on August 4, 2006; however, no claims were amended in the Response. The claims on appeal herein are, accordingly, as amended in the Response to Office Action dated March 8, 2006 and as finally rejected on June 16, 2006.

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SUMMARY OF CLAIMED SUBJECT MATTER

A. CLAIM 1 - INDEPENDENT

The subject matter of claim 1 is directed to a method for removing image artifacts (16, Fig. 2, see page 3, lines 15-17) from an image (14, Fig. 2, see page 3, lines 15-17) of a scene illuminated by a light source, wherein the image is represented by image data. A flicker function is determined, wherein the flicker function is a function of flicker frequency, flicker amplitude and flicker phase of the light source (30, Fig. 7, page 12, lines 2-4, see also Figs. 8A and 8B, page 12, line 6 – page 13, line 4). The image data is processed using the flicker function so as to remove image artifacts from the image (40, Fig. 7, see page 12, lines 4-5), wherein the image data comprises an image data array comprised of a plurality of rows of image data, and wherein the processing step comprises dividing the image data by the flicker function on a row-by-row basis (74, Fig. 8B, see page 12, lines 18-19).

B. CLAIM 17 – INDEPENDENT

The subject matter of claim 17 is directed to an apparatus for removing image artifacts (16, Fig. 2, see page 3, lines 15-17) from an image (14, Fig. 2, see page 3, lines 15-17) of a scene illuminated by a light source. The apparatus (100, Fig. 9, see page 13, lines 5-8) includes a unit for providing image data representing the scene (102, 104, Fig. 9, see page 13, lines 8-12), and a flicker function determiner (106, Fig. 9, see page 13, lines 13-17) for determining a flicker function, wherein the flicker function is a function of flicker frequency, flicker amplitude and flicker phase of the light source, and wherein the flicker function determiner includes means (106, Fig. 9, see page 13, lines 13-15) for determining the flicker frequency, the flicker amplitude and the flicker phase. An image data processor (108, Fig. 9, see page 13, lines 15-17) processes the image data using the flicker function to remove the image artifacts (16, Fig. 2, see page 3, lines 15-17) from the image, wherein the image data comprises an image data array comprised of a plurality of rows of image data, and wherein the image data processor (108, Fig. 9, see page 13, lines 15-17) processes the image data by dividing the image data by the flicker function on a row-by-row basis.

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C. CLAIM 21 – INDEPENDENT

The subject matter of claim 21 is directed to a digital imaging method. The method includes steps of determining a flicker function by analyzing a digital image (30, Fig. 7, page 12, lines 2-4, see also Figs. 8A and 8B, page 12, line 6 – page 13, line 4), and processing the digital image using the flicker function (40, Fig. 7, see page 12, lines 4-5) so as to reduce image artifacts from the digital image, wherein the determining step involves determining values of parameters associated with an *a priori* flicker model (see page 5, line 26 – page 6, line 5), wherein the parameters comprise a flicker frequency, a flicker amplitude and a flicker phase, and wherein the processing step involves dividing the digital image by the flicker function (74, Fig. 8B, see page 12, lines 18-19).

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GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. GROUND OF REJECTION 1 (Claims 1, 7, 8, 17, 20 and 21)

Claims 1, 7, 8, 17, 20 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,710,818 B1 to Kasahara et al., in view of U.S. Patent No. 6,208,433 B1 to Iwakawa et al.

B. GROUND OF REJECTION 2 (Claim 10)

Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,710,818 B1 to Kasahara et al., in view of U.S. Patent No. 6,208,433 B1 to Iwakawa et al., and further in view of Applicant's Admitted Prior Art.

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AVAGO TECHNOLOGIES, LTD.
P.O. Box 1920
Denver, Colorado 80201-1920**ARGUMENT****A. GROUND OF REJECTION 1 (Claims 1, 7, 8, 17, 20 and 21)**

Claims 1, 7, 8, 17, 20 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,710,818 B1 to Kasahara et al. (hereinafter "Kasahara") in view of U.S. Patent No. 6,208,433 B1 to Iwakawa et al. (hereinafter "Iwakawa").

In finally rejecting the claims, the Examiner states:

[Claim 1]

Kasahara discloses a method for removing image artifacts from an image of a scene illuminated by a periodically varying light source, said image represented by an image data array comprising a plurality of rows of image data, the method comprising:

determining a flicker function that models light emission of the periodically varying light source (e.g., column 8, line 28 - column 9, line 10), wherein said flicker function is a function of flicker amplitude, flicker frequency and flicker phase of the periodically varying light source (e.g., as shown in Fig. 4A the flicker is a function of amplitude, frequency, and phase based on the varying light source, Col. 9, lines 6-10, figure 4a teach that the output of dividing circuit 4 (figure 1) on the ordinate axis represents flicker and abscissas represents line number at a frame. Therefore in figure 4a, flicker is shown to be varying with amplitude, frequency and phase of a periodically varying light source. Line numbers of a particular frame represent the luminance level of particular pixel on which light from the varying light source is converted into electrical energy also stated in col. 8 lines 28-32) and processing said image data using said flicker function so as to remove said image artifacts from said image (e.g., column 15, lines 48-51; column 16, lines 5-13).

Kasahara fails to disclose image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis. However Iwakawa discloses said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis (e.g., Examiner notes that the scene is scanned by the one-dimensional image sensor so as to generate two-dimensional image data wherein each row is corrected by dividing the image signal by the flicker function; column 5, lines 14-19 and 41-67, Also See col. 4 lines 12-32, figure 3).

Therefore taking the combined teachings of Kasahara and Iwakawa, it would be obvious to one skilled in the art at the time of the invention to have

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been motivated to have an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis in order to prevent the flicker due to line-by-line deviation (col. 5 lines 64-67).

Final Office Action dated June 16, 2006, pages 3-4.

Claim 1 on appeal herein is as follows:

1. A method for removing image artifacts from an image of a scene illuminated by a light source, said image represented by image data, the method comprising:
determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source, and
processing said image data using said flicker function so as to remove image artifacts from said image, wherein said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis.

Appellant respectfully submits that neither Kasahara nor Iwakawa nor Kasahara in view of Iwakawa discloses or suggests "determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source", or "processing said image data using said flicker function so as to remove image artifacts from said image, wherein said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis".

Initially, Appellant respectfully disagrees that Kasahara discloses or suggests "determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source". Kasahara is directed to a mechanism for compensating for flicker by controlling shutter speed (see col. 16, lines 7-13 of Kasahara). The Examiner refers generally to col. 8, line 28 – col. 9, line 10 of Kasahara and, more specifically, to col. 9, lines 6-10 and Fig. 4A of Kasahara as disclosing "determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source". Col. 8, line 28 – col. 9, line 10 and Fig. 4A of Kasahara are reproduced below for the convenience of the Board:

The video signal is generated by a video camera (not shown in FIG. 1) under illumination of which luminance varies in accordance with the voltage

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change of the ac line. That is, an image of an object illuminated by fluorescent lamps is shot by the video camera.

FIGS. 2A and 2B are illustration of the first embodiment.

The integration circuit 1 integrates, accumulates, or averages the pixel levels (luminance level) at every horizontal line (unit area). The integrating result of i^{th} line of n^{th} frame is represented by $SUM_{n,i}$ as shown in FIG. 2A. If one frame of the video signal includes 480 lines, the integration circuit 1 calculates the integration result $SUM_{n,1}$ to $SUM_{n,480}$ for $i=1$ to 480.

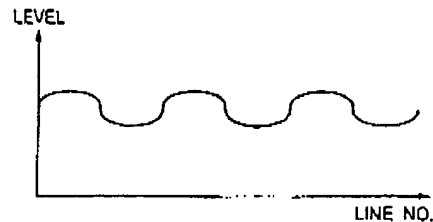
The memory 2 successively stores a predetermined number of frames (fields) of the integration result. The averaging circuit 3 effects addition or averaging among $SUM_{n,i}$ from the integration circuit 1, $SUM_{n-1,i}$, $SUM_{n-2,i}$, and $SUM_{n-3,i}$ from the memory 2. FIG. 2B shows the summing or averaging operation from the integration results of the present frame and the previous frames. The memory 2 stores the integration result $SUM_{n,i}$ and outputs the integration results $SUM_{n-1,i}$, $SUM_{n-2,i}$, $SUM_{n-3,i}$ at the i^{th} line at frames $n-1$ to $n-3$. The averaging circuit 3 averages (sums) $SUM_{n,i}$, $SUM_{n-1,i}$, $SUM_{n-2,i}$, and $SUM_{n-3,i}$. That is, the averaging circuit 3 averages the integrated level at each of the unit areas at the present frame or field and the integrated level at the corresponding unit area at an adjacent previous frame or field. The averaging result is represented as $AVE_{n,i}$. In this embodiment, the number of the previous frames per one unit averaging operation is three. However, it is also possible that, at least, the integration results of more than one previous frames are added to the integration result of the present frame.

The dividing circuit 4 obtains $SUM_{n,i} / AVE_{n,i}$ through calculation from the output $SUM_{n,i}$ of the integration circuit 1 and the output $AVE_{n,i}$ of the averaging circuit 3. That is, the dividing circuit 4 effects division between results of the averaging and integration every unit area. The flicker judging circuit 5 judges whether there is flicker with the dividing result of the dividing circuit 4. FIG. 3 is a block diagram of the flicker judging circuit 5. The flicker judging circuit 5 includes a DFT (Discrete Fourier Transform) circuit 21 supplied with the division result $SUM_{n,i} / AVE_{n,i}$ and a comparing circuit 22 for comparing the output of the DFT circuit 21 with threshold values.

FIG. 4A is a graphical drawing showing the output of the dividing circuit 4 according to the first embodiment, wherein the axis of abscissas represents line number at a frame and the axis of ordinates represents levels of dividing results, that is, $SUM_{n,i} / AVE_{n,i}$. The dividing results shows flicker.

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FIG. 4A



The above recitation describes the operation of the flicker detection apparatus illustrated in Fig. 1 of Kasahara. Fig. 4A is a graph showing the output of dividing circuit 4 in the apparatus. In Fig. 4A, the axis of abscissas represents line number at a frame and the axis of ordinates represents levels of dividing results, that is, $SUM_{n,i} / AVE_{n,i}$ wherein the dividing results show flicker.

As described in the above recitation, $SUM_{n,i}$ is the integrating result of the i^{th} line of n^{th} frame from integration circuit 1, and $AVE_{n,i}$ is the average of (sums) $SUM_{n,i}$, $SUM_{n-1,i}$, $SUM_{n-2,i}$, and $SUM_{n-3,i}$ that is output by averaging circuit 3. Specifically, averaging circuit 3 “averages the integrated level at each of the unit areas at the present frame or field and the integrated level at the corresponding unit area at an adjacent previous frame or field”.

Neither Fig. 4A nor the above recitation in Kasahara, nor anywhere else in Kasahara, contains a disclosure of determining a flicker function that is “a function of flicker frequency, flicker amplitude and flicker phase of said light source”. Only the present application contains such a disclosure. Therefore, Kasahara does not disclose or suggest “determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source”.

Iwakawa does not supply the deficiencies in Kasahara. Iwakawa also does not disclose or suggest “determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source” as recited in claim 1. In addition, neither Kasahara nor Iwakawa discloses or suggests “processing said image data using said flicker function so as to remove image artifacts from said image, wherein said image data comprises an image data array comprised of a plurality of rows of image data, and

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wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis" as also recited in claim 1.

In responding to Appellant's arguments presented in the Response to Final Office Action dated August 4, 2006, the Examiner further states:

2. ... As explained in the previous office action, Iwakawa teaches in figure 3 the principle of the invention wherein the compensated output $V_c(x, y)$ corresponding to a pixel (x, y) on an original copy 31 is represented by the following equation (1): $V_c(x, y) = V_0 * V(x, y) / V_{ref}(y)$ (1)

where $V_{ref}(y)$ represents a flicker detection signal, $V(x, y)$ represents a video signal of the original copy 31 (col. 4, lines 12-32). Similar to figure 3, figures 4 to 9 represent the first embodiment of the invention and have a division circuit 5 (figure 4) that performs the division V_{in}/V_{ref} , using the sample hold V_{ref} obtained from the sample-hold 3 (col. 5 lines 55-59). Therefore, V_{ref} represents the flicker signal as explained in figure 3 according to a principle of the invention. Different rows are shown in figure 5a. Thus Iwakawa does teach dividing said image data by said flicker function on a row-by-row basis.

Advisory Action dated August 25, 2006, page 3.

Although, as noted by the Examiner, V_{ref} is described in Iwakawa as representing a "flicker detection signal", V_{ref} does not represent a flicker function, and certainly does not represent a flicker function that is a function of the flicker frequency, flicker amplitude and flicker phase of a light source as required by claim 1. Accordingly, Iwakawa does not disclose or suggest "processing said image data using said flicker function so as to remove image artifacts from said image, wherein said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis" as recited in claim 1 (emphasis added).

As described in col. 5, lines 30-37 of Iwakawa:

A timing generation circuit 4 is designed to generate the timing signal for sampling the image signal by the prism 2 to supply the timing signal to the sample-hold circuit 3. The division circuit 5 is designed to divide the image signal V_{in} obtained from the one-dimensional image pick-up device 1 by the signal V_{ref} obtained from the sample-hold circuit 3. An amplification circuit 6

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is designed to perform the amplification required for the following circuits.
(Emphasis added.)

Thus, as clearly stated above, signal V_{ref} , by which image signal V_{in} is divided, is obtained from sample-hold circuit 3. As described in col. 5, lines 20-29 of Iwakawa, however:

A prism 2 receives an ambient light 13 and applies the ambient light to the photosensor array 9. The whole light reception area 19 of the photosensor array 9 is provided with a reception area 12 for receiving light from the prism 2 and an area 11 for picking up an image of the object. The reception area 12 and the area 11 are completely independent optically. No optical interference is therefore caused to occur. A sample-hold circuit 3 is designed to sample and hold the image signal by the prism 2 in the image signal obtained from the one-dimensional image pick-up device 1. (Emphasis added.)

Thus, the prism 2 receives ambient light only, and sample-hold circuit 3 samples and holds the image signal from prism 2 such that V_{ref} is an image signal representing only ambient light from prism 2.

Yet further, in col. 4, lines 16-21 of Iwakawa, it is stated:

FIG. 3 models the component of the incident light into the image pick-up apparatus according to the present invention. Herein, it is assumed that the illumination 30 is composed of two types of light, for example, flicker containing fluorescent lamp and ambient light free from flicker such as sunlight. (Emphasis added.)

From the above recitations in Iwakawa, it is clear that sample-hold circuit 3 in Figure 4 receives a light signal from prism 2, that the light from prism 2 is ambient light only, and that the ambient light is light that is free from flicker. Since the ambient light is free from flicker, V_{ref} cannot represent a flicker function of any type, and certainly does not represent a "flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source" as recited in claim 1. Inasmuch as V_{ref} does not represent a flicker function, neither Iwakawa nor Kasahara in view of Iwakawa discloses or suggests "processing said image data using said flicker function so as to remove image artifacts from said image, wherein said image data comprises an image data array comprised

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of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis" as recited in claim 1.

Appellant also respectfully submits that it would also not be obvious to one skilled in the art to combine the teachings of Kasahara with Iwakawa in an effort to achieve the present invention. Kasahara and Iwakawa describe mechanisms for compensating for flicker which are quite different from one another, and there is no suggestion in either reference to combine them as proposed by the Examiner in an effort to achieve the present invention. Only the present application contains any such suggestion, and the Examiner's rejection appears to be based on hindsight using Appellant's own disclosure as a basis for combining the references, and not the teachings in the cited references themselves.

For at least all the above reasons claim 1 is not obvious over Kasahara in view of Iwakawa and patentably distinguishes over the references in its present form.

Claims 7 and 8 depend from and further restrict claim 1 and also patentably distinguish over Kasahara in view of Iwakawa, at least by virtue of their dependency.

Independent claims 17 and 21 recite limitations similar to claim 1 and are allowable over Kasahara in view of Iwakawa for similar reasons as discussed above with respect to claim 1. Claim 20 depends from claim 17 and is allowable in its present form at least by virtue of its dependency.

Therefore, claims 1, 7, 8, 17, 20 and 21 patentably distinguish over Kasahara in view of Iwakawa and it is respectfully requested that the Board reverse the Examiner's Final Rejection of the claims.

B. GROUND OF REJECTION 2 (Claim 10)

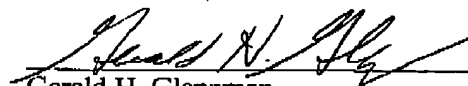
Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,710,818 B1 to Kasahara et al. (hereinafter "Kasahara"), in view of U.S. Patent No. 6,208,433 B1 to Iwakawa et al. (hereinafter "Iwakawa"), and further in view of Applicant's Admitted Prior Art (hereinafter "AAPA"). The Examiner cites AAPA as disclosing "that it is known to use a CMOS image sensor with a rolling shutter to provide shutter control".

Claim 10 depends from and further restricts claims 1. AAPA does not supply the deficiencies in Kasahara and Iwakawa as described in detail above, and claim 10, accordingly,

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is not obvious in view of the references, at least by virtue of its dependency.

Therefore, claim 10 patentably distinguishes over Kasahara in view of Iwakawa and AAPA in its present form, and it is respectfully requested that the Board reverse the Examiner's Final Rejection of the claim.


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CLAIMS APPENDIX

The text of the claims involved in the appeal are:

1. A method for removing image artifacts from an image of a scene illuminated by a light source, said image represented by image data, the method comprising;

determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source, and

processing said image data using said flicker function so as to remove image artifacts from said image, wherein said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis.

7. The method according to Claim 1, wherein said light source comprises a periodically varying light source.

8. The method according to Claim 7, wherein said periodically varying light source comprises a fluorescent light source.

10. The method according to Claim 1, wherein said image data is collected from a CMOS image sensor utilizing a rolling shutter to provide exposure control.

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17. Apparatus for removing image artifacts from an image of a scene illuminated by a light source, comprising:

a unit for providing image data representing said scene:

a flicker function determiner for determining a flicker function, wherein said flicker function is a function of flicker frequency, flicker amplitude and flicker phase of said light source, and wherein said flicker function determiner includes means for determining said flicker frequency, said flicker amplitude and said flicker phase; and

an image data processor that processes said image data using said flicker function to remove said image artifacts from said image, wherein said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said image data processor processes said image data by dividing said image data by said flicker function on a row-by-row basis.

20. The apparatus according to Claim 17, wherein said light source comprises a fluorescent light source.

21. A digital imaging method comprising the steps of:

determining a flicker function by analyzing a digital image; and

processing said digital image using said flicker function so as to reduce image artifacts from said digital image, wherein said determining step involves determining values of parameters associated with an a priori flicker model, wherein said parameters comprise a flicker frequency, a flicker amplitude and a flicker phase, and wherein said processing step involves dividing said digital image by said flicker function.

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EVIDENCE APPENDIX

There is no evidence to be presented.

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RELATED PROCEEDINGS APPENDIX

There are no related proceedings.